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ABSTRACT

This paper presents and illustrates a framework for synthesis of research and theory on human characteristics, and relates that framework to the concerns of individuals working in the visual literacy area. The framework presented casts learner characteristics into four general types, derived from two primary dimensions: stability/change and likeness/difference. The four types of learner characteristics described are (1) changing likenesses, (2) stable likenesses, (3) changing differences, and (4) stable differences. Each learner characteristic type is discussed with regard to its significance to instructional design and visual literacy. The paper concludes with the suggestion that an attempt to achieve thoughtful synthesis of all types of relevant learner characteristics would make possible the development of successful visual literacy programs. A 29-item list of references is attached. (Author/JEG)

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Visual Literacy:
the Learner Dimension

adapted from: Students and Other People as Human Beings: An Overview of Human Characteristics of Potential Relevance to Instructional Design

Delivered at annual meeting of Association for Education Communications and Technology, March 6, 1979, New Orleans

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Students and Other People as Human Beings:
An Overview of Human Characteristics of
Potential Relevance to Instructional Design

Human beings are bewilderingly complex creatures, possessing a large number of characteristics and tending to be highly differentiated within these characteristics. In confronting these complexities, educators frequently retreat into one or another defense position with regard to learners and their characteristics. One form of retreat, for example, is to concern one's self exclusively with a single dimension of human capability, disclaiming all others as being of negligible importance. Somebody's theory regarding a single, albeit important, aspect of human functioning, is hailed and accepted by many as the answer. True believer retreats such as these are often quite noisy and, it seems, are sometimes a source of educational fadism. Another line of retreat with regard to learner characteristics is to give up on the whole thing in the presence of incomplete knowledge. This sort of retreat may be one source of a predisposition to educational mushiness, in which semi-formed notions about the nature of learners and the art of teaching substitute for really trying to approach teaching and learning with a degree of precision and systematic inquiry. I have seen visual literacy also, itself, afflicted with tunnel vision on the one hand and wide-angle myopia on the other.

There is a least one way to confront the complexities of human characteristics without retreating. This approach

is to proceed in one's area of interest from the standpoint of a search for synthesis. What is to follow represents the result of my own efforts at making some sense out of a wide range of work in human characteristics as they might apply to instruction and visual literacy. A fairly simple conceptual scheme has emerged and is one which does seem to accomodate a good proportion of significant lines of work in human characteristics. I believe the scheme clarifies some relationships and patterns of human characteristics which should be of concern to eductors, whether they are involved in visual literacy or not.

Given the broad scope involved, no systematic attempt will be made to present state-of-the-art in all lines of work. Such a work would be quite long, and should involve the combined efforts of a group of experts in each area concerned. I hope, however, that what is being presented here will be sufficient to illustrate the framework and certain posited relationships among lines of work used as illustration.

A Framework for Human Characteristics

At the outset, let us view people as having two kinds of characteristics. The first kind includes those in which human beings are more or less alike. Even though, in the final analysis, people are all different, we do share some attributes common to the species. Just as all leaves and snowflakes are different in detail, all leaves operate, in certain respects at least, in the same way; and all snowflakes get formed, in certain respects at least, in the same way. Something useful is learned

about plants and weather when the search for differences and unique attributes is supplanted with a search for commonalities that shed light on what these things really are and how they might come to be. And so it has been with many aspects of the study of human characteristics. Important likenesses among people have been found which do not present themselves upon casual observation.

Another way to view people includes the ways in which they may be different. The notion of individual differences is so pervasive in educational thought that little explanation or defense of the idea seems needed here. Suffice it to say that, while many differences between people are superficial and not too germane as guides for educational practice, other differences remain which should make a difference in educational practice.

Beyond likenesses and differences, we might also consider whether the characteristic in question tends to change over time or remain relatively stable. It goes without saying that as living things, people undergo constant change, but there remain characteristics that are more or less stable.

Four fundamental kinds of characteristics are therefore generated: (a) likenesses among people which change over time, (b) likenesses which are stable, (c) differences between people which change over time, and (d) differences which are stable.

Likenesses which change over time

Dynamics of intellectual development (Piaget)

Dynamics of psychosocial development (Freud, Erikson, Maslow)

Dynamics of language development (Chomsky)

Dynamics of moral development (Kohlberg)

Stable Likenesses

Sensory capacities

Information processing--in certain regards (Miller, Paivio)

Conditions for acquistion of "types" of learning (Gagne)
(i.e., response to conditions of learning)

Differences which change over time

States of development (intellectual, psychosocial, language, moral)

Prior learning (Gagne, Bloom, Merrill)

Social experience (Bandura-use of models)

Motivation, volition

Stable differences

I.Q.; general ability vs. I.Q. score

Cognitive styles

see schema

Hemispheric lateralization

Locus of control--personality styles, social styles

Cultural/Ethnic background

Implications

Some generalizations can be drawn about the types of characteristics presented here. Characteristics under likenesses, both those that change and those that are stable, can and should be used in the design or planning of instruction which will be the same, in certain regards at least, for a group or a class. For general strategies, sequencing, and specific learning activities which are appropriately based on these factors, what will work for one person in a class of group will work for everyone. The specific approaches to planning for effective teaching and to the design of entire instructional systems which are based on understandings of development processes and types of learning, for example, are among the most powerful tools currently available for increasing the efficiency and effectiveness of instruction. Visual literacy programs deserve more help from these tools. Too frequently, I believe, the joy and thrill of inductive learning processes so frequently employed in visual literacy programs--in other words, employing discovery and inquiry methods of teaching--are taken as being synonymous and equivalent to visual literacy itself. Our joy and thrill with the process should not blind us to thoughtful consideration of product and to the design and development of effective instructional alternatives employing the hard-headed tools of learning task analysis.

The area of differences between people which change-- developmental state, learning and experience as outcomes, motivations, interests and values-- contains factors which instructional designers can apply in prescribing instructional management structures and which will typically require a teacher's close attention for each individual student. Not only are there differences between students in these regards, but they keep changing out from under you as time goes on. These changing differences, then, are the learner characteristics for which the need for individualization and adaptive instruction becomes most clear. Furthermore, these are the primary factors that education and training have an influence on. After a period of time, what a school or visual literacy program does will have been, in retrospect, a contribution to each student's developmental state, prior learning, social experience, values and motivations. How sophisticated are we in visual literacy at dealing with learner differences of these sorts? Do we over-assume a likeness among learners as to their current states of, for example, prior learning, with regard to visual literacy? I would like to gently suggest that every now and then, this may be the case.

Finally, the area of differences between people which are stable is one of both danger and promise. Some progress is being made on the more flagrant discriminations based on race and gender, but other stable differences between people are little enough recognized or understood at present to make it too easy to wrong students in some subtle ways. We still find it a common practice in schools to discriminate against people on the basis of I.Q. scores, handedness (a product of hemispheric lateralization), and cognitive style. To illustrate how common practice can be subtly discriminitory, let me make a quick reference to a study by Rollins and Genser, reported in a 1977 article in the Journal of Educational Psychology. In viewing the success of impulsive versus reflective children in solving problems with few versus many dimensions, Rollins and Genser found the impulsive children to perform better than their reflective counterparts on the more complex problems. The authors concluded that the non-systematic approach to problem solving employed by the impulsive children may be more efficient in allowing them to proceed on the basis of hunches. Insights from this and related studies stand in the face of efforts in many school programs to make impulsive children behave like reflective children do.

The promise in the area of stable differences lies in what may come from increased precision and depth of understanding about learner differences of this sort. Along with increased knowledge, we seem to be coming around to a pluralistic respect and even celebration of many of these differences between people.

With regard to visual literacy, it seems to me as if it could go either way. I must admit that I am more optomistic about visual literacy than I am about some other areas in education, but I would ask that each of you question your assumptions about learners and visual literacy in the face of the areas research which I have summarized today.

Conclusion

Human beings are complex creatures. Given the vast amount of information both known and yet to be uncovered about human functioning, it should be little wonder that both the researcher and the practitioner find it easy to get lost in the topic--each in his own way. However, it would seem that, while there may be countless factors to consider, there may be a relative few which should be of critical, primary conern to the teacher, instructional designer/developer, and worker-in-visual literacy. Without pretense of "covering everything," eighteen major areas of presumed relevance to educators were presented here, grouped into only four categories. If you were to list out all of the specific variables from each of the 18 areas and work in a linear fashion from that list, my guess is that you will get lost. However, if you work from the four types of characteristics as a set of unifying concepts, and you attempt to achieve a synthesis of many variables worthy of your attention, I believe it is possible to evolve visual literacy programs which both work and are good for people.

References

Back, K.T., Stansell, V., Ragan, T.J., Ausburn, L.J., Ausburn, F.B., and Huckaback, K. Cognitive styles: a bibliography and selected annotations. AFHRL-TR-78-90(II). Lowry AFB, CO: Technical Training Division, Air Force Human Resources Laboratory, December, 1978.

Bandura, A. Principles of behavior modification. New York: Holt, Rinehart & Winston, 1969.

Bandura, A. (Ed.). Psychological modeling. New York: Lieber Atherton, 1974.

Bloom, B. Human characteristics and school learning. New York: McGraw-Hill, 1976.

Bloom, B., et. al. Taxonomy of educational objectives, the classification of educational goals, handbook I: Cognitive domain. New York: McKay, 1956.

Broadbent, D. E. Perception and communication. New York: Pergamon, 1958.

Chomsky, N. Aspects of the theory of syntax. Cambridge: The M.I.T. Press, 1965.

Erikson, E. H. Identity, youth and crisis. New York: Norton, 1968.

Gagne, R. M. The conditions of learning (3rd ed.). New York: Holt, Rinehart & Winston, 1977.

Galin, D., & Ornstein, R. Lateral specialization of cognitive mode: an EEG study. Psychophysiology, 1972, 9, 412-418.

Hilgard, E. R., & Bower, G. H. Theories of learning (3rd ed.). New York: Appleton-Century-Crofts, 1965.

Inhelder, B., & Piaget, J. The growth of logical thinking. New York: Basic Books, 1958.

Kagan, J. Reflection-impulsivity: The generality and dynamics of conceptual tempo. Journal of Abnormal Psychology, 1966, 71, 17-24.

Klein, G. The personal world through perception. In R. R. & G. V. Ramsey (Eds.). Perception: An approach to personality. New York: Ronald Press, 1951.

Levy, J., Trevarthen, C. B., & Sperry, R. W. Perception of bilateral chimeric figures following hemispheric deconnexion. Brain, 1972, 95, 61-78.

Lowenfeld, V., & Brittain, W. L. Creative and mental growth. New York: Macmillan, 1970.

Merrill, M. D. Content and instructional analysis for cognitive transfer tasks. Audiovisual Communications Review, 1973, 21, 109-125.

Miller, G. A. The magic number 7, plus or minus two: Some limits on our capacity for processing information. Psychological Review, 1956, 63, 81-97.

Molfese, D. Cerebral asymmetry in infants, children and adults: Auditory evoked responses to speech and musical stimuli. Journal of the Acoustical Society of America, 1973, 53, 393.

Paivio, A. Imagery and verbal processes. New York: Holt, Rinehart & Winston, 1971.

Ragan, T.J., Back, K.T., Stansell, V., Ausburn, L.J., Ausburn, F.B., Butler, P.A., Huckabay, K., and Burkett, J.R. Cognitive styles: a review of the literature. AFHRL-TR-78-90(I). Lowry AFB, CO: Technical Training Division, Air Force Human Resources Laboratory, December, 1978.

Randhawa, B.S., & Coffman, W.E.(Eds.). Visual learning, thinking and communication. New York: Academic Press, 1978.

Santostephano, S. A developmental study of the cognitive control "leveling-sharpening." Merrill-Palmer Quarterly, 1964, 10, 343-360.

Snow, R. E. Individual differences and instructional theory Educational Researcher, 1977, 6(10), 11-15.

Travers, R. M. W. Research and theory related to audiovisual information transmission (Rev. ed) (USOE Contract No. 3-20-003). Washington D.C.: U.S. Dept of Health, Education & Welfare, Office of Education, 1967.

Vernon, M. D. The psychology of perception (2nd ed.). Baltimore: Penguin, 1971.

Witkin, H. A., Moore, C. A., Goodenough, D. R., & Cox, P. W. Field-dependent and field-independent cognitive styles and their educational implications. Review of Educational Research, 1977, 47, 1-64.

Wittrock, M.C. The cognitive movement in instruction. Educational Psychologist, 13, 1978. Also, in condensed form, in Educational Researcher, 8, 2, February, 1979.

Zaidel, E., & Sperry, R. W. Level of consciousness in the surgically disconnected minor hemisphere. Cal. Tech. Biology Annual Report, 1973, 55.

HUMAN CHARACTERISTICS

LIKENESSES		DIFFERENCES	
change	stable	change	stable
▪Development processes. . . ·Intellectual ·Psychosocial ·Language	▪Sensory Capacities ▪Info. Processing ▪Types of Learning ▪Conditions of Learning	▪Developmental state. . . ·Intellectual ·Psychosocial ·Language ▪Prior Learning ▪Prior Experience ▪Motivation	▪I.Q. ▪Cognitive Styles ▪Hemispheric Lateralization ▪Locus of Control ▪Cultural/Ethnic Background